From: Mike Petersen [mpetersen@landscouncil.org]

Sent: 12/3/2018 8:23:49 PM

To: Doug Krapas [dougkrapas@iepco.com]; ABOR461@ECY.WA.GOV; Lisa Dally Wilson (Ex. 6 Personal Privacy (PP)

Ex. 6 Personal Privacy (PP); Benjamin Floyd [ben@whitebluffsconsulting.com]; 'Lahti, Greg'

[LahtiG@wsdot.wa.gov]; 'tom@agnewconsulting.com' [tom@agnewconsulting.com]; Edmondson, Lucy

[Edmondson.Lucy@epa.gov]; 'Olsen, Catherine' [colsen@spokanecity.org]; 'Williams, Tammie'

[WilliamT@wsdot.wa.gov]; 'Pond, Elsa' [PondE@wsdot.wa.gov]; Greenlund, Doug [dgreenlund@spokanecity.org];

Lauren Heine [lheine@northwestgreenchemistry.org]; David Darling [ddarling@paint.org]; Lara Floyd

[lara@whitebluffsconsulting.com]

Subject: Sunlight and a catalyst break down pollutants

Thanks for sharing, Doug.

I ran across this interesting study, which doesn't mention PCB's but it does mention a chlorinated acetic acid?

Sunlight can be used to eradicate pollutants in water

Complex filters and laser systems are not necessary to destroy persistent pollutants in water. Chemists at Martin Luther University Halle-Wittenberg (MLU) have developed a new process that works using just sunlight. The process is so simple that it can even be conducted outdoors under the most basic conditions. The chemists have presented their research in Chemistry—a European Journal.

November 27, 2018

Sunlight can be used to eradicate pollutants in water

Ex. 4 - Copyright



Journal reference: Chemistry – A European Journal Provided by: Martin-Luther-Universität Halle-Wittenberg

Read more at: https://phys.org/news/2018-11-sunlight-eradicate-pollutants.html#jCp

From: Doug Krapas <dougkrapas@iepco.com> Sent: Friday, November 30, 2018 11:30 AM

To: Borgias, Adriane P. (ECY) <ABOR461@ECY.WA.GOV>; Lisa Dally Wilson (Ex. 6 Personal Privacy (PP))

< Ex. 6 Personal Privacy (PP) ; Benjamin Floyd <ben@whitebluffsconsulting.com>; 'Lahti, Greg'

 $<\!\!\!\text{LahtiG@wsdot.wa.gov>; 'tom@agnewconsulting.com'}<\!\!\!\text{tom@agnewconsulting.com'>; 'Edmondson.Lucy@epa.gov'}$

<Edmondson.Lucy@epa.gov>; 'Olsen, Catherine' <colsen@spokanecity.org>; 'Williams, Tammie'

<WilliamT@wsdot.wa.gov>; Mike Petersen <mpetersen@landscouncil.org>; 'Pond, Elsa' <PondE@wsdot.wa.gov>; Greenlund, Doug <dgreenlund@spokanecity.org>; Lauren Heine <lheine@northwestgreenchemistry.org>; David Darling <ddarling@paint.org>; Lara Floyd <lara@whitebluffsconsulting.com>

Subject: FW: PCB sniffing dog

Thought you all might get a kick out of this. Pretty cool, but not sure it would be of much value to us since it appears that the lower detection level is 100 ppb.

Have a great weekend ya'll.

Doug

From: Suzanne Replinger [mailto:SuzanneR@windwardenv.com]

Sent: Friday, November 30, 2018 11:03 AM

To: Doug Krapas **Cc:** Nancy Judd

Subject: RE: PCB sniffing dog

Hi Doug -

It's been a while since I first emailed, but I wanted to pass along the attached abstract regarding our PCB detection dog study work – we have completed the work, and are now at a place where we can share the results. The attached abstract (which was prepared for the upcoming 2019 Battelle sediment conference) describes the study and results. To give you the really short summary – the study was a success. Sampson (the detection dog) was able to detect PCBs in a variety of sources (e.g., caulk, paint, and soil), and if used correctly, our study concluded that detection dogs could be an efficient way of locating PCBs as part of source control efforts.

Feel free to contact me if you have questions about this or would like to hear more.

Thanks!

Suzanne

Suzanne Replinger Senior Associate Windward Environmental, LLC 200 W Mercer St, Suite 401 Seattle, WA 98119 Direct Line: 206.812.5435 suzanner@windwardenv.com

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From: Suzanne Replinger

Sent: Tuesday, February 14, 2017 9:31 AM

To: 'dougkrapas@iepco.com' <dougkrapas@iepco.com>

Cc: Nancy Judd < Nancy J@windwardenv.com >

Subject: RE: PCB sniffing dog

Hi Doug -

Nancy passed your email on to me -1've been the one at Windward who has been coordinating our work on the detection dog project. I don't think we're ready to share results/information about this study quite yet, but hopefully will be in the next couple months. At that point, we'd be more than happy to give you some materials to be able to share with folks who are interested!

I'll be in touch once we have something to share. Thanks!

Suzanne

Suzanne Replinger Senior Associate Windward Environmental, LLC 200 W Mercer St, Suite 401 Seattle, WA 98119 Direct Line: 206.812.5435 suzanner@windwardenv.com

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From: Nancy Judd

Sent: Wednesday, February 08, 2017 12:18 PM

To: Suzanne Replinger < Suzanne R@windwardenv.com>

Subject: FW: PCB sniffing dog

From: Doug Krapas [mailto:dougkrapas@iepco.com]
Sent: Wednesday, February 08, 2017 10:20 AM
To: Nancy Judd <Nancy J@windwardenv.com>

Subject: RE: PCB sniffing dog

Thanks Nancy for circling back. I have told numerous people about this interesting concept and they were just as intrigued as I am. I would like to do a little more promoting with the Spokane River Regional Toxics Task Force (www.SRRTTF.org) to see if we can find some opportunity to put this into action in our watershed. Do you have any additional information that you can share as promotional materials that I can forward to the greater good?

Thanks again,

Doug

Doug Krapas Environmental Manager



From: Nancy Judd [mailto:Nancy]@windwardenv.com]

Sent: Wednesday, January 25, 2017 8:51 AM

To: Doug Krapas

Subject: PCB sniffing dog

Hi Doug,

I called you a few weeks ago about work Windward has done with a PCB sniffing dog (for use in source identification). Thanks for your interest and thoughts about reaching out to Andy Dunau for the Spokane River Forum and the Spokane River Toxics Task Force. I think we will definitely be doing these things but it may be a few months yet. The team Windward is working with, which includes the City of Seattle and University of Washington, are interested in getting their work out there, but right now are focused on finished up their internal reporting, etc. I just wanted to loop back to you so this would not be just a mysterious blip that fades from your radar without follow up. Hope to have the opportunity to share this work with you and other later this year. Best, Nancy

Nancy Judd

Partner



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